

Water-Data Report 2012

06295000 YELLOWSTONE RIVER AT FORSYTH, MT

Lower Yellowstone Basin
Lower Yellowstone-Sunday Subbasin

LOCATION.--Lat 46°16'00", long 106°41'29" referenced to North American Datum of 1983, in NE ¼ NW ¼ NW ¼ sec.23, T.6 N., R.40 E., Rosebud County, MT, Hydrologic Unit 10100001, on right bank 0.3 mi downstream from U.S. Highway 12 bridge, at Forsyth, and at river mile 238.2.

DRAINAGE AREA.--40,146 mi² of which 691 mi² probably is noncontributing.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--July 1921 to September 1923 (no winter records), October 1977 to current year. Miscellaneous discharge measurements were made in 1974 to 1976 and are available in files at the USGS Water Science Center located in Helena, Montana.

REVISED RECORDS.--Water Data Report MT-04-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,504.62 ft, referenced to the National Geodetic Vertical Datum of 1929, from nearby elevation determined by City of Forsyth. July 1921 to March 1922, nonrecording gage on discontinued highway bridge 10 ft downstream from gage at different elevation. March 1922 to September 1923, nonrecording gage on discontinued highway bridge 10 ft downstream from gage at elevation 2 ft higher.

REMARKS.--Records are good except estimated daily discharges are poor. Diversions for irrigation include about 838,000 acres upstream from station. Flow is regulated to some extent by Bighorn Lake, usable capacity, 1,312,000 acre-ft, on Bighorn River. Small diversion dam is located about 4,200 ft downstream from station. U.S. Geological Survey satellite telemeter is located at the station. Several unpublished observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1918 reached a stage of about 20 ft, elevation used in 1921, information from local residents.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	7,790	8,890	7,530	7,090	e7,200	6,180	6,340	15,500	15,900	18,000	6,900	3,610
2	7,800	8,430	7,480	6,700	e7,200	6,220	6,180	13,600	15,900	17,500	6,580	3,620
3	7,790	8,470	7,140	6,750	e7,200	6,270	6,170	12,500	18,400	16,900	6,190	3,640
4	7,800	8,620	7,010	6,740	e7,100	6,180	6,640	12,000	24,200	16,300	5,980	3,620
5	7,820	8,500	6,800	6,860	e7,000	6,140	6,810	11,000	31,500	15,900	5,870	3,630
6	7,840	8,170	e6,400	6,870	e6,800	6,260	6,560	10,300	37,200	15,600	5,780	3,740
7	7,890	8,200	e5,900	6,780	e6,600	6,590	6,520	9,990	41,700	14,700	5,510	3,670
8	8,680	8,180	e5,800	6,630	e6,600	6,680	6,920	10,100	40,700	13,300	5,120	3,650
9	8,800	8,050	e5,800	6,450	e6,400	6,430	6,970	9,330	30,100	12,300	4,920	3,670
10	8,990	7,930	e6,300	6,350	e6,500	6,230	6,770	8,600	27,500	11,800	4,740	3,620
11	8,710	7,950	e6,900	6,600	e6,700	6,130	9,380	8,300	30,600	11,200	4,700	3,560
12	8,670	7,990	e6,900	e6,600	e6,600	6,180	9,920	10,500	26,400	10,900	4,830	3,550
13	8,980	8,010	e6,800	e6,400	e6,400	6,200	7,780	12,000	22,300	10,700	4,900	3,670
14	9,130	8,000	e6,700	e6,200	e6,500	6,070	7,300	11,000	20,400	10,400	4,880	3,760
15	9,480	8,050	e6,700	e5,900	6,730	6,040	8,060	11,000	20,600	10,100	4,800	3,750
16	9,700	7,810	6,820	e5,800	6,590	6,000	8,230	12,100	21,800	10,200	4,740	3,710
17	9,690	7,680	6,740	e5,500	6,430	5,990	7,700	15,100	21,700	10,600	4,790	3,670
18	9,760	7,550	6,860	e5,000	6,390	6,030	7,310	18,600	21,000	10,800	4,720	3,690
19	10,000	7,630	6,970	e4,300	6,370	6,210	7,010	21,000	22,600	10,900	4,600	3,710
20	10,200	e7,600	6,930	e4,500	6,420	6,640	6,930	22,400	24,100	10,300	4,430	3,660
21	10,200	e7,200	7,010	e4,800	6,290	6,770	6,970	19,900	23,100	9,610	4,190	3,680
22	10,100	e7,440	6,750	e5,500	6,390	e6,500	6,850	17,500	20,500	9,050	4,060	3,650
23	10,100	7,370	6,690	e6,800	6,750	6,240	6,660	17,500	19,300	8,650	3,940	3,630
24	10,100	8,100	6,420	e7,200	7,280	6,060	6,790	22,600	20,200	8,220	3,910	3,550
25	10,100	8,140	6,110	e7,100	8,090	6,070	8,120	24,700	21,900	7,850	3,830	3,490
26	9,660	7,900	6,350	e7,100	7,700	6,090	10,600	21,300	23,600	7,550	3,820	3,470
27	9,620	7,680	6,480	e7,300	6,790	6,200	15,200	19,700	23,600	7,210	3,750	3,510
28	9,650	7,490	6,860	e7,200	6,430	6,320	18,000	18,600	23,600	6,950	3,760	3,670
29	9,140	7,520	6,840	e7,000	6,300	6,530	19,400	18,000	22,000	6,870	3,720	3,710
30	8,920	7,440	6,950	e7,000	---	6,610	17,800	17,100	19,100	7,080	3,620	3,830
31	8,940	---	7,010	e7,100	---	6,500	---	16,100	---	7,160	3,610	---
Total	282,050	237,990	207,950	198,120	195,750	194,560	261,890	467,920	731,500	344,600	147,190	109,390
Mean	9,098	7,933	6,708	6,391	6,750	6,276	8,730	15,090	24,380	11,120	4,748	3,646
Max	10,200	8,890	7,530	7,300	8,090	6,770	19,400	24,700	41,700	18,000	6,900	3,830
Min	7,790	7,200	5,800	4,300	6,290	5,990	6,170	8,300	15,900	6,870	3,610	3,470
Ac-ft	559,400	472,100	412,500	393,000	388,300	385,900	519,500	928,100	1,451,000	683,500	292,000	217,000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	7,199	6,745	5,871	5,510	5,794	6,601	7,416	17,300	30,040	18,280	7,792	6,598
Max	10,720	10,490	8,927	7,796	10,210	15,120	13,270	32,870	63,710	50,810	17,570	11,320
(WY)	(1983)	(1983)	(1983)	(1983)	(1997)	(1979)	(1997)	(2011)	(1997)	(2011)	(1997)	(1978)
Min	3,519	4,186	3,624	3,242	3,511	3,223	4,153	7,570	14,690	5,523	2,742	2,723
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2008)	(2004)	(1987)	(2007)	(2001)	(2001)

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SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1978 - 2012	
Annual total	6,699,200		3,378,910			
Annual mean	18,350		9,232		10,440	
Highest annual mean					18,040	2011
Lowest annual mean					6,026	2001
Highest daily mean	74,900	Jul 4	41,700	Jun 7	97,000	May 21, 1978
Lowest daily mean	4,100	Feb 22	3,470	Sep 26	1,400	Nov 23, 1977
Annual seven-day minimum	4,770	Feb 21	3,570	Sep 22	2,030	Aug 26, 2001
Maximum peak flow			44,400	Jun 8	106,000	May 21, 1978
Maximum peak stage			8.05	Jun 8	14.53	May 21, 1978
Instantaneous low flow			3,410	Sep 27	1,400	Nov 23, 1977
Annual runoff (ac-ft)	13,290,000		6,702,000		7,562,000	
10 percent exceeds	56,100		18,600		22,300	
50 percent exceeds	8,850		7,010		7,000	
90 percent exceeds	5,830		3,830		4,220	

